

AMENDMENTS TO THE CLAIMS

Claims 1-43 (Cancelled)

Claim 44 (Currently Amended) A decoding method for decoding blocks of picture data included in a bit stream ~~a block while switching between frame decoding and field decoding adaptively on a block-by-block basis~~, said decoding method comprising:

obtaining, by a command obtainment unit and from the [[a]] bit stream including the blocks of picture data, a sequence of commands for respectively ~~each of~~ frame-indices, used for frame decoding, ~~to respective reference frames of the blocks of picture data;~~

adaptively switching, by a processor and on a block-by-block basis of the blocks of picture data, between frame decoding and field decoding;

specifying, by a reference frame specification unit and in a case where frame decoding is performed on a block of picture data included in the bit stream, a reference frame, which is referred to when decoding the block of picture data ~~a block is decoded, according to using~~ a reference index extracted from a coded block information area of the bit stream and according to a frame-index included in the assigned frame-indices, ~~in the case where frame decoding is performed on the block;~~ and

specifying, by a reference field specification unit and in a case where field decoding is performed on the block of picture data included in the bit stream, a reference field, which is referred to when decoding the block of picture data ~~is decoded, according to using~~ a reference index extracted from the coded block information area of the bit stream and according to a field-

index, ~~which is~~ for field decoding the block of picture data ~~and~~ which is generated using a frame-index included in the assigned frame-indices, ~~in the case where field decoding is performed on the block.~~

Claim 45 (Currently Amended) The decoding method according to Claim 44, wherein said specifying of the reference field includes:

specifying, as the reference field, a field having a parity ~~that which~~ is the same as a parity of a field including the block of picture data ~~to be decoded~~, out of two fields that make up the reference frame specified according to ~~by~~ the frame-index, ~~in the a~~ case where a value of the extracted reference index is double a value of the frame-index; and

specifying, as the reference field, a field having a parity ~~that which~~ is different from the parity of ~~[a]~~ the field including the block of picture data ~~to be decoded~~, out of the two fields that make up the reference frame specified according to ~~by~~ the frame-index, ~~in the a~~ case where the value of the extracted reference index is double the value of the frame-index, plus one.

Claim 46 (Previously Presented) The decoding method according to Claim 45, further comprising:

obtaining, from the bit stream, information indicating a maximum number of frame-indices; and

determining a maximum number of field-indices to be double a value of the maximum number of frame-indices,

wherein said specifying of the reference field includes extracting the reference index

within a range of the determined maximum number of field-indices.

Claim 47 (Currently Amended) A data storage medium having-on-which a program stored thereon, the program for decoding a coded block signal is recorded, wherein, and the program causing-causes a computer to execute ~~the processing by~~ the decoding method according to Claim 46.

Claim 48 (Currently Amended) A data storage medium having-on-which a program stored thereon, the program for decoding a coded block signal is recorded, wherein, and the program causing-causes a computer to execute ~~the processing by~~ the decoding method according to Claim 45.

Claim 49 (Currently Amended) A data storage medium having-on-which a program stored thereon, the program for decoding a coded block signal is recorded, wherein, and the program causing-causes a computer to execute ~~the processing by~~ the decoding method according to Claim 44.

Claim 50 (Currently Amended) A decoding apparatus for decoding blocks of picture data included in a bit stream while adaptively switching, on a block-by-block basis of the blocks of picture data, between frame decoding and field decoding which decodes a block while switching between frame decoding and field decoding adaptively on a block-by-block basis, said decoding apparatus comprising:

a command obtainment unit operable to obtain, from[[a]] the bit stream including the blocks of picture data, a sequence of commands for respectively assigning each of frame-indices, used for frame decoding, to respective reference frames of the blocks of picture data; and

a reference frame/field specification unit operable to:

_____ (i)-specify, in a case where frame decoding is performed on a block of picture data included in the bit stream, a reference frame, which is referred to when decoding the block of picture data a block is decoded, according to using a reference index extracted from a coded block information area of the bit stream and according to a frame-index included in the assigned frame-indices, in the case where frame decoding is performed on the block, and; and

_____ (ii)-specify, in a case where field decoding is performed on the block of picture data included in the bit stream, a reference field, which is referred to when decoding the block of picture data is decoded, according to using a reference index extracted from the coded block information area of the bit stream and according to a field-index, which is for field decoding the block of picture data and which is generated using a frame-index included in the assigned frame-indices, in the case where field decoding is performed on the block.

Claim 51 (Currently Amended) A coding method for coding blocks of picture data a block while switching between frame coding and field coding adaptively on a block-by-block basis, said coding method comprising:

generating, by a command generation unit, a sequence of commands for respectively assigning each of frame-indices, used for frame coding, to respective reference frames of the blocks of picture data;

adaptively switching, by a processor and on a block-by-block basis of the blocks of picture data, between frame coding and field coding;

specifying, by a reference frame specification unit and in a case where frame coding is performed on a block of picture data of the blocks of picture data, a reference frame₁ which is referred to when coding the block of picture data a block is coded, according to using a frame-index included in the assigned frame-indices for frame coding assigned by the sequence of commands, in the case where frame coding is performed on the block;

specifying, by a reference field specification unit and in a case where field coding is performed on the block of picture data, a reference field₁ which is referred to when coding the block of picture data the block is coded, according to using a field-index₁ which is for field coding the block of picture data and which is generated using the frame-index included in the assigned frame-indices, in the case where field coding is performed on the block;

coding, by a reference index coding unit and as a reference index, the frame-index₁ which is used for specifying the reference frame, in the case where frame coding is performed on the block of picture data; and

coding, by the reference index coding unit and as a reference index, the field-index₁ which is used for specifying the reference field, in the case where field coding is performed on the block of picture data.

Claim 52 (Currently Amended) The coding method according to Claim 51, wherein said specifying of the reference field includes:

specifying, as the field-index, a doubled value of a value of the frame-index₁ which is

used for specifying a reference frame including the reference field, in ~~the a~~ case where the reference field has a same parity as a parity of a field including the block of picture data to be coded; and

specifying, as the field-index, a value obtained by adding one to the doubled value of the value of the frame-index, which is used for specifying the reference frame including the reference field, in ~~the a~~ case where the reference field has a different parity from the parity of the field including the block of picture data to be coded.

Claim 53 (Currently Amended) The coding method according to Claim 52, further comprising:

coding information indicating a maximum number of frame-indices ~~for frame coding~~;

and

determining a maximum number of field-indices ~~for field coding~~ to be double a value of the maximum number of frame-indices ~~for frame coding~~,

wherein said specifying of the reference field ~~for field coding~~ includes determining the field-index so that ~~the a~~ number of specified reference fields is not greater than the determined maximum number of field-indices.

Claim 54 (Currently Amended) A data storage medium having on which a program stored thereon, the program for coding an image signal is ~~recorded, wherein, and~~ the program causing- ~~causes~~ a computer to execute ~~the coding by~~ the coding method according to Claim 53.

Claim 55 (Currently Amended) A data storage medium having-on-which a program stored thereon, the program for coding an image signal is recorded, wherein, and the program causing- causes a computer to execute ~~the coding by~~ the coding method according to Claim 52.

Claim 56 (Currently Amended) A data storage medium having-on-which a program stored thereon, the program for coding an image signal is recorded, wherein, and the program causing- causes a computer to execute ~~the coding by~~ the coding method according to Claim 51.

Claim 57 (Currently Amended) A coding apparatus for coding blocks of picture data-which ~~codes a block~~ while adaptively switching, on a block-by-block basis of the blocks of picture data, between frame coding and field coding ~~adaptively on a block-by-block basis,~~ said coding apparatus comprising:

a command generation unit operable to generate a sequence of commands for respectively assigning ~~each of~~ frame-indices, used for frame coding, ~~to respective~~ reference frames of the blocks of picture data;

a reference frame/field specification unit operable to;

_____ (i) specify, in a case where frame coding is performed on a block of picture data of the blocks of picture data, a reference frame, which is referred to when coding the block of picture data-a block is coded, according to using a frame-index included in the assigned frame-indices for frame coding assigned by the sequence of commands, ~~in the case where frame coding is performed on the block, and;~~ and

_____ (ii) specify, in a case where field coding is performed on the block of picture data,

a reference field, which is referred to when coding the block of picture data ~~the block is coded,~~
according to using a field-index, which is for field coding the block of picture data and which is
generated using the frame-index included in the assigned frame-indices, ~~in the case where field-~~
~~coding is performed on the block;~~ and

a reference index coding unit operable to;

_____ ~~(iii)~~ code, as a reference index, the frame-index, which is used for specifying the
reference frame, in the case where frame coding is performed on the block of picture data, ~~and;~~
and

_____ ~~(iv)~~ code, as a reference index, the field-index, which is used for specifying the
reference field, in the case where field coding is performed on the block of picture data.